ON *STOREUS, EMPLESIS,* AND OTHER CURCULIONIDAE, MOSTLY FROM QUEENSLAND.

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(Contribution from South Australian Museum.)

Storeus and *Emplesis* are genera represented by many small Australian weevils; to distinguish the genera, with certainty, the claws must be closely examined, in most cases a hand lens being insufficient. This not having been done on many occasions some confusion has resulted. Fortunately types, cotypes, or authentic specimens of most of the previously named species are before me, in addition to many new ones.

Storeus (type *variegatus* Fab.).
Emplesis (type *scolopax* Pasc.).
Artematocis (type *longirostris* Lea).

The typical species of *Storeus* is *variegatus*, a common and well-known weevil from Sydney, but which occurs also in Victoria and Tasmania; of *Emplesis* it is *scolopax*, a rare South Australian weevil.

Pascoe referred these genera to two sections of the Erirhinides: *Emplesis* to the Cryptoplides, and *Storeus* to the Storeoides; on the same page[1] he associated *Lybœba* and *Enide* with *Storeus*, and placed *Diethusa* in the *Erirhinides vrais*, noting of *Storeus* "Pectus not canaliculate." In this he was in error, but no doubt he examined a specimen without removing its head.

Blackburn in dealing with the two genera considered they might be separated by the abdominal segments, or by the femora: dentate in *Storeus* (although *S. signatus* was described as having edentate femora) and edentate in *Emplesis*.

In 1899[2] I referred all the species of *Emplesis* to *Storeus*, and named many new ones. I had examined the claws of many species and presumed them all to be simple. *Storeus* was regarded by Lacordaire, Pascoe, and Blackburn as belonging to the Erirhinides; and *Emplesis* by the two latter entomologists as a closely allied genus, differing only in the femora and abdomen, and as all their species have a well-defined pectoral canal, and agree in so many other features, it seemed desirable to unite them.

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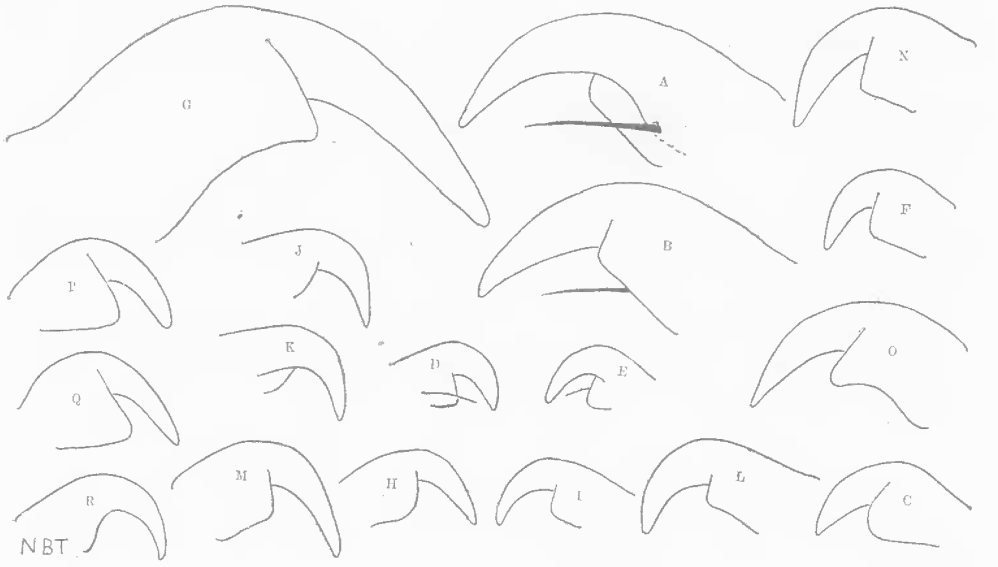
[1] Pascoe, Ann. and Mag. Nat. Hist., 1873, p. 182.
[2] Lea, Trans. Roy. Soc., S. Aust., p. 159.

Having occasion recently to examine many species of the Erirhinides and Tychiides, and in particular some large species of *Storeus* belonging to the Queensland Museum, the claws of several species of that genus were seen to be appendiculate, I could not see that the claws of *S. variegatus* were appendiculate under a hand lens (× 12), but under a microscope they were distinctly so, as the outlines (figs. A and B) drawn under the camera lucida render certain; the genus must, therefore, be transferred to the Tychiides. The claw joint is seldom extended much beyond the lobes of the third, the claws are strongly divergent, and are drawn strongly backwards, so that it is difficult to see them clearly, on account of the large size and clothing of the third joint; on many of the tessellated species of *Emplesis* they regularly and slightly increase in width to the base as on other Erirhinides, but on some of them the increase is more decided. I found it impossible to be sure of some of the claws by examination with a hand lens, especially as a speck of dirt or grease may make a considerable difference in the appearance of a claw. For the outline drawings



Text-fig. 1.—Claws of species of *Storeus*.—A, B.—*variegatus* Fab.; C.—*albosignatus* Blackb.; D, E.—*setosus* Lea; F.—*variabilis* Lea; G.—*maximus* Lea; H, I.—*bœodontus* Lea; J, K.—*scutellaris* Lea; L.—*acutidens* Lea; M.—*carinirostris* Lea; N.—*specularis* Lea; O.—*armipennis* Lea; P.—*aurifer* Lea; Q.—*minimus* Lea. Of *Emplesis*.—R.—*storeoides* Pasc.

(made by Mr. N. B. Tindale under a fairly high power of the microscope) claw joints were detached, and the claws themselves separated under pressure, afterwards being mounted in Canada balsam on slides. A tactile seta is present on each claw but this was usually omitted from the drawings.

The most striking feature of species of both genera is the possession of a

pectoral canal, fairly deep in front and bordered by sharply defined walls, but narrowed between the front coxæ, much as in many species of *Diethusa* and *Melanterius*; it is often difficult to see the canal until the head has been removed. On this being done, however, it may be seen clearly on all the species, and to start from an incurvature of the apex of the prosternum. Blackburn's line for *scolopax* in his table of *Emplesis*: "Prosternum not (or scarcely at all) concave in front of the anterior coxæ"; is not reliable, as the canal, after removal of the head, is as well defined on that species as on most of the genus. In fact many species with the head resting on the breast (the usual position of unset specimens) have quite the normal appearance of members of the Cryptorhynchides. In commenting on *Emplesis* he said[3]: "Some of them having a most unmistakable channel running down the front part of the prosternum, which, according to M. Lacordaire, would take them out of the Erirhinides altogether." In *Bagous* there is a somewhat similar channel, and there is an approach to it in some species of *Cydmœa*, on species of which the front coxæ may or may not be in contact, but that they belong to the Erirhinides appears to be certain. Subsequently Blackburn[4] considered that Pascoe was wrong in transferring *Diethusa*, *Lybœba*, and *Enide* from the Erirhinides to the Cryptorhynchides, on account of the short pectoral canal and slightly separated front coxæ. The three latter genera have since been amalgamated, that they are closely allied to *Melanterius* is certain, and that the latter is close to *Euthebus* is also certain; the latter genus has a deep pectoral canal and can only be referred to the Cryptorhynchides. Blackburn further considered that if *Diethusa*, &c., were transferred to the Cryptorhynchides, *Storeus*, *Emplesis* and *Bagous* should follow it. *Storeus*, in fact, seemed to be a connecting link between the Erirhinides and Cryptorhynchides, and several genera that appeared to be close to it are placed with the latter subfamily.

Blackburn referred no species to *Storeus*, but his *albosignata* and *majuscula* referred to *Emplesis*, have appendiculate claws, and must stand under *Storeus*.

S. captiosus, *contortus*, *falsus*, *setosus* and *variabilis* Lea also have appendiculate claws and must remain in *Storeus*.

Boheman referred *signatus* to *Storeus*, although noting its femora as edentate. It must remain in that genus until the type or an authentic specimen can be examined. It is evidently a prettily marked species and appears to be close to several *Empleses* before me, but the length and exact locality were not noted, and quite possibly it does not belong to either *Storeus* or *Emplesis*.

In the Munich Catalogue *Erirhinus australis* Montr., from Lifu, is referred to *Storeus*. I do not know that species, but am able to name three Fijian ones.

[3] Blackburn, Proc. Linn. Soc. N.S. Wales, 1890, p. 330.

[4] Blackburn, Trans. Roy. Soc. S. Aust., 1893, p. 301.

Paying special attention to the claws on a re-examination of *S. pulchricollis* these were seen to be truly simple; its pectoral canal is deep, and the intercoxal process of the mesosternum has a small process on each side, the femora are strongly dentate, and it appears now desirable to transfer it to the Cryptorhynchides, and to associate it with a species of *Ephrycellus* from Lord Howe Island.

All the other species referred to *Emplesis* by Pascoe, Blackburn, and Faust (several of which, however, are unknown to me) must now be referred back to that genus, together with the species referred by myself to *Storeus* (with the above-noted exceptions). I did not specially examine the claws of *S. metasternalis* (the type is now in the British Museum) but probably it is an *Emplesis*.

Artematocis was proposed for two species having distinctly appendiculate claws, and was correctly referred to the Tychiides, although its resemblance to *Storeus* (then presumed to have simple claws) was pointed out. The genus may well be retained, and probably several others will be proposed at the expense of *Storeus*.

All the genera have the rostrum long, and usually considerably longer on the female than on the male; eyes with coarse facets, pectoral canal distinct, and third and fourth segments of abdomen usually distinctly curved. In *Emplesis* the femora are usually edentate, in the other genera they are usually dentate.

On each side of the prosternum of all the species of *Storeus* there is a fovea that is usually fairly deep, and has at its bottom a very thin membrane, through which an eye can look when the insect has its rostrum resting in the pectoral canal; on some of the species the de ression appears as a fairly large round fovea, on some it is semi-double, on others it appears as a thin curved furrow; it undoubtedly serves as a "peep-hole"; for further comments see under *S. specularis*. An apparent remnant of it may be seen on many species of *Emplesis*.

The previously described species of the genera, as I now understand them, are :—

STOREUS.

albosignatus Blackb.
captiosus Lea.
contortus Lea.
falsus Lea.
majusculus Blackb.
setosus Lea.
signatus Boh.
variegatus Fab.
variabilis Lea.

EMPLESIS.

ænigmatica Blackb.
amœna Lea.
assimilis Blackb.
bellula Lea.
brachyderes Lea.
canaliculata Lea.
consueta Lea.
cryptorhyncha Lea.
cyphirhina Lea.
dispar Lea.
dorsalis Lea.
elliptica Lea.
ephippigera Lea.
femoralis Lea.
filirostris Pasc.
gravis Blackb.
ignobilis Lea.
impotens Lea.
inamœna Lea.
indistincta Lea.
interioris Blackb.
invidiosa Lea.
juvenca Lea.
lineigera Pasc.
lithostrota Lea.
macrostyla Lea.
mediocris Lea.
metasternalis Lea.
monticola Blackb.
multiarticulata Lea.
munda Blackb.
nigrofasciata Lea.
niveiceps Lea.
notata Blackb.
occidentalis Lea.
ocellata Blackb.
parvula Lea.
paupercula Lea.
remissa Faust.
scolopax Pasc.
storeoides Pasc.
tessellata Lea.
tuberculifrons Lea.
umbrosa Blackb.

ARTEMATOCIS.

longirostris Lea.
squamibundus Lea.

EPHRYCELLUS.

pulchricollis Lea.

Storeus variegatus Fab.

(Text-figure 1, A, B.)

As already noted the claws of this species are appendiculate, the bristle shown in the figures is similar to that on most species of the genus, and similar bristles may be seen on many species of *Emplesis*.

Storeus albosignatus Blackb. (*Emplesis*).

(Text-figure 1, C.)

Although each claw of this species has quite a large appendix, it is difficult to see it clearly in any light with a hand lens. The species is a common one in New South Wales, Victoria, Tasmania, and South Australia.

Storeus majusculus Blackb. (*Emplesis*).

Blackburn has already commented upon the clothing of the front tibiæ of the male of this species ; each of its claws has a basal appendix, more distinct on the front ones of the male than on the others.

Storeus falsus Lea.

The front tibiæ of the male (the only sex known) of this species, are clothed much as on the preceding species, and the appendix to each claw may be seen fairly clearly in certain lights.

Storeus setosus Lea.

(Text-figure 1, D, E.)

A small variable species. Under a hand lens I cannot see that the claws are appendiculate, but under the microscope they are distinctly so ; two figures are given to show the appearance of the appendix and tactile seta from inner and outer positions.

Storeus variabilis Lea.

(Text-figure 1, F.)

Another small variable species, in which the appendix can scarcely be seen without a compound power.

Storeus maximus n. sp.

(Text-figure 1, G.)

♂. Reddish-brown. Densely clothed with stramineous brown scales and setæ.

Rostrum slightly longer than prothorax, slightly curved, almost parallel-sided, sculpture concealed by clothing except quite close to apex. Antennæ inserted one-third from apex of rostrum. Prothorax strongly transverse, sides gently rounded but apex suddenly narrowed ; punctures normally concealed. Elytra very little wider at base (which is trisinuate) than base of prothorax, sides gently rounded ; with rows of rather large, partially concealed punctures ; interstices multinodose, the nodes small but quite distinct on the odd interstices, very feeble on the even ones. Third and fourth segments of abdomen combined slightly longer than fifth, and distinctly longer than second. Legs rather long, femora acutely dentate, front tibiæ with a dense fringe of long hairs from near base to apex ; claws with a large basal appendix. Length, 8–8·5 mm.

♀. Differs in having the rostrum slightly more curved, abdomen more convex, and front tibiæ not fringed, although with a small apical fascicle.

Queensland (C. French), Malanda (Dr. E. Mjoberg), Cairns district (A. M. Lea).

Very distinct by its large size, nodose elytra and fringed tibiæ. There are evidently ridges on the rostrum of the male, but the clothing is so dense as to conceal them, even on the female it is clothed almost to the tip. Some of the prothoracic scales have a golden gloss in certain lights. The wall on each side of the pectoral canal in front of the coxa is produced downwards in the form of an equilateral triangle, and the "peep holes" are partly obscured by clothing.

Storeus fimbripes n. sp.

♂. Dark reddish-brown, antennæ and legs somewhat paler. Densely clothed with stramineous-brown scales and setæ, on sides and apical half of elytra variegated with feeble dark spots.

Rostrum about once and one-fourth the length of the prothorax, slightly curved, not quite parallel-sided; with acute ridges alternated with rows of squamiferous punctures to apical fourth (where the antennæ are inserted), in front of which the punctures are crowded and naked. Prothorax and elytra as in preceding species, except that the elytra are not nodose. Abdomen slightly flattened along middle, third and fourth segments each very little shorter than second, fifth as long as first. Legs moderately long, femora acutely dentate, front tibiæ with a conspicuous fringe of long hairs on lower surface, commencing near base. Length, 3·5–4·5 mm.

Queensland. Cairns (E. Allen).

In general appearance like the preceding species on a much smaller scale, but third and fourth segments of abdomen somewhat larger, the elytra not nodose, their clothing somewhat variegated posteriorly, and the ridges on the rostrum more conspicuous through the clothing. There is a distinct compound depression, "peep hole," on each side in front of the prosternum.

Storeus inustus n. sp.

♂. Dark brown, some parts almost black, antennæ and tarsi paler. Densely clothed with stramineous scales and setæ, varying to black.

Rostrum distinctly longer than prothorax, almost straight to near apex, parallel-sided; with sharply defined ridges alternated with rows of squamiferous punctures to apical fourth (where the antennæ are inserted), in front of which the punctures are crowded. Prothorax strongly transverse, sides gently rounded, becoming strongly depressed in front; punctures dense but normally concealed. Elytra at extreme base (which is feebly trisinuate) no wider than prothorax; with rows of large punctures, appearing small through clothing, but each containing a seta; interstices in parts uneven or slightly nodulose. Abdomen slightly flattened along middle, fifth segment slightly longer than second, and with two apical bristles. Legs rather long; femora dentate, the front ones very feebly so; front tibiæ with a conspicuous fringe of long hairs, commencing near base of under surface, and partly continued on to tarsi. Length 5 mm.

New South Wales. Tooloom in January. Type in Queensland Museum, *C/3180.*

On the under parts the clothing is entirely stramineous or buff, on the upper surface more than half of the clothing is stramineous, but in parts becoming slightly infuscated; on the elytra there are numerous small black, velvety looking spots; just before the summit of the apical slope there is a conspicuous V of pale scales and setæ, extending from the suture across three interstices on each elytron, behind which the scales are entirely pale; the setæ on the V are almost white, and are slightly fasciculate in appearance. On the pronotum the clothing is in ill-defined vittæ, but many of the setæ differ in colour from the adjacent scales. The V is suggestive of affinity with *S. variegatus*, but on that species the front tibiæ are not fringed. The "peep hole" on each side of the prosternum is represented by a small fovea connected with the wall of the pectoral canal by a narrow slit. A second specimen differs from the type in having the front tibiæ shorter, with the fringe much less conspicuous but still distinct, and the abdomen slightly more convex; but as its rostrum and antennæ are as on the type, presumably it is also a male. A third specimen, taken by Mr. Hacker on Bunya Mountain, agrees well with the type in structure, but is abraded and stained; the V of its elytra is less distinct, but its middle appears as a rather distinct fascicle on the suture; many of its prothoracic scales have a golden gloss.

Storeus humeralis n. sp.

♂. Black, some parts obscurely diluted with red, antennæ and legs (wholly or in part) paler. Clothed with scales varying from almost white to sooty-brown, and with a few setæ.

Rostrum slightly longer than prothorax, slightly curved, almost parallel sided; sculpture concealed by clothing up to apical fourth (where the antennæ are inserted) beyond which the punctures are crowded. Prothorax strongly transverse, parallel-sided to near apex, and then strongly narrowed; with small dense punctures, interspersed with many larger ones, all partly obscured by clothing. Elytra distinctly wider than prothorax, widest at about basal fourth, base trisinuate, but only the scutellar notch distinct; with rows of large punctures in feeble striæ, the outer row concealed from above. Abdomen somewhat flattened along middle, the fifth segment slightly longer than second and third combined, sutures of second to fourth almost straight at sides. Legs moderately long; femora acutely and almost equally dentate; front tibiæ with a conspicuous fringe of long hairs from near base; claws each with a large appendix. Length, 5–7 mm.

♀. Differs in having the rostrum longer, thinner, slightly more curved, clothed only near base, elsewhere with rather small punctures, antennæ inserted two-fifths from apex, abdomen more convex, the fifth segment slightly smaller and front tibiæ not fringed.

Queensland. National Park in November and Bunya Mountains in December (H. Hacker). Type in Queensland Museum; cotype *I. 16334*, in South Australian Museum.

A large dingy species. The scales on the head, rostrum, and prothorax are mostly of a rusty-brown colour; somewhat similar scales form a large patch on each shoulder, the inner hind end of which is connected with a distinct V of pale scales, the junction of which is on the suture at the summit of the apical slope; before, beyond, and at the sides of which the scales are small and of a sooty-brown colour, but on the tips the scales are again pale. On each of the National Park specimens there is a large, obscurely reddish, patch at the base of the abdomen, the patch on the male continued on to the metasternum. The abdominal sutures are much less curved than is usual. The elytral epipleuræ are rather wide, but become narrow posteriorly, and terminate slightly before the apex of abdomen. The "peep holes" on the prosternum are fairly large.

Storeus ventralis n. sp.

♂. Black, parts of under surface obscurely reddish, rostrum, antennæ and legs (wholly or in part) paler. Moderately clothed with scales of various colours, becoming almost uniformly whitish on under parts.

Rostrum slightly longer than prothorax, gently curved; with acute ridges, alternated with rows of squamiferous punctures to apical third (where the antennæ are inserted), in front with crowded punctures. Prothorax strongly transverse, apex suddenly narrowed; with dense, normally concealed punctures. Elytra wider than prothorax at base, widest slightly before middle, base faintly trisinuate; with rows of large punctures, appearing much smaller through clothing, in parts slightly nodulose. Two basal segments of abdomen with a shallow depression, third and fourth very short, fifth slightly longer than second to fourth combined, with a large depression. Femora edentate; front tibiæ with a thin fringe of long hairs commencing almost at base. Length, 3·5–4 mm.

♀. Differs in having the rostrum much longer, thinner, more strongly curved, paler, glabrous and almost impunctate, antennæ inserted at apical two-fifths; abdomen evenly convex, fifth segment not as long as second and third combined, and front tibiæ not fringed.

Queensland. Stradbroke Island in March (H. Hacker and A. M. Lea), and in December (Hacker). Type, *I. 16305*, in South Australian Museum; cotype in Queensland Museum, *C/3182*.

Distinguished from the other species with fringed tibiæ, except *S. majusculus*, by the edentate femora and very short third and fourth segments of abdomen; from that species it differs in being somewhat smaller, rostrum smaller, apical patch of elytra less defined or missing, and tibial fringe more

conspicuous. No two specimens, of the nine taken, are exactly alike in their clothing; the males have about half of it black or blackish, with slaty-grey spots or single scales scattered about, and with small stramineous patches, on which there are usually a few pale setæ; on the females the clothing is mostly of a rusty brown, with small dark spots and numerous whitish setæ (to a certain extent their clothing is as on *S. albosignatus*). The "peep holes" of the prosternum are masked by paler scales than on the adjacent surface.

Storeus tenuirostris n. sp.

♀. Blackish, rostrum antennæ and parts of legs reddish. Densely clothed with stramineous-brown scales and setæ, with numerous small black spots on elytra, and three obscure ones on pronotum, underparts with almost white clothing.

Rostrum distinctly longer than prothorax, thin, cylindrical, slightly curved, glabrous, and sparsely and minutely punctate. Antennæ inserted in exact middle of rostrum. Prothorax strongly transverse, sides evenly rounded to near apex, and then suddenly narrowed; with crowded, more or less concealed punctures. Elytra subcordate, sides almost evenly rounded, base distinctly trisinuate, with rows of large, partially concealed, setiferous punctures; alternate interstices very feebly elevated, and some of them slightly nodulose. Abdomen moderately convex, fifth segment slightly longer than second. Femora acutely dentate, claws appendiculate. Length, 5 mm.

New South Wales.—Sydney (A. M. Lea), unique.

In general appearance fairly close to *S. fimbripes*, but the base of the elytra is conspicuously trisinuate, their epipleuræ are less defined (the curvature being continuous with the rest of the elytra) and the abdominal segments are more strongly curved. In appearance it also approaches *S. variegatus*, but the apex of the tibiæ has a much less acute projection, the elytra are without a black basal patch, the rostrum is distinctly thinner than on its female, and the appendix to each claw is smaller. Probably its male belongs to the group with fringed front tibiæ.

Storeus bæodontus n. sp.

(Text-figure 1, H, I.)

Reddish-brown, rostrum antennæ and tarsi somewhat paler. Moderately clothed with greyish-white scales, slightly variegated on elytra, and frequently with a golden gloss, especially between the eyes, on underparts almost uniformly white.

Rostrum slightly longer than prothorax, moderately curved, feebly dilated at base; with fine ridges alternated with rows (squamiferous near base) to between antennæ (at apical two-fifths), in front of which the punctures are sparse and minute. Prothorax strongly transverse, sides strongly rounded, apex about two-thirds the width of base; punctures mostly concealed. Elytra elongate-subcordate, base bilobed, with rows of large, partially concealed punctures. Fifth segment of abdomen slightly longer than second. Femora minutely dentate. Length, 2·75–3 mm.

New South Wales.—Sydney (Dr. E. W. Ferguson), Jenolan (J. C. Wiburd).

Not very close to any previously described species, and in general resembling some species of *Elleschodes*, but with the pectoral canal well defined. Each "peep hole" is small, and from it there is a narrow groove extending obliquely upwards. It is difficult to see the appendix to each claw, until this has been mounted on a slide for examination. The six specimens examined have the rostrum with well-defined ridges, but clothed only at the basal third or fourth, and the abdomen evenly convex, so they are probably all females. On several of them the suture is feebly infuscated, and on two of them the metasternum is darker than the abdomen. A specimen from Hobart (A. M. Lea) apparently belonging to the species, is slightly larger and more densely clothed than the others, and but few of its scales have a golden gloss.

Storeus scutellaris n. sp.

(Text-figure 1, J, K.)

Reddish-brown, suture and most of under surface black, rostrum, antennæ (the club infuscated) and tarsi reddish. Moderately clothed with white, stramineous, and sooty scales, becoming uniformly white on underparts.

Rostrum slightly longer than prothorax, moderately curved, parallel-sided; with acute ridges alternated with rows of squamiferous punctures to apical third (where the antennæ are inserted), in front with sharply defined punctures, except on a median line. Prothorax strongly transverse, sides strongly rounded, apex about two-thirds the width of base; punctures crowded but mostly concealed. Elytra elongate-cordate, base bilobed; with regular rows of large, partially concealed punctures. Abdomen with first and second segments slightly depressed in middle, fifth slightly shorter than second and third combined. Femora slightly but acutely dentate. Length, 3 mm.

South Australia.—Melrose in October (A. M. Lea). Type (unique), *I. 16299*.

A mottled species, somewhat like the following in miniature, but with a thinner and more curved rostrum, blackish club, and scutellum with snowy scales. The mottling is partly due to the derm being sparsely clothed in places. On the upper surface most of the scales are whitish, and these form two connected vittæ on each side of the prothorax; six short vittæ at their base, and many small spots on the rest of the elytra; the sooty spots are few and inconspicuous, and the stramineous scales are sparse. The "peep holes" of the prosternum are feeble. On this species the claws are certainly appendiculate, but they are nearest in approach to ones that may definitely be regarded as simple.

Storeus acutidens n. sp.

(Text-figure 1, L.)

♂. Black, rostrum, parts of elytra and of legs obscurely brownish, antennæ and tarsi paler. Moderately and irregularly clothed with whitish,

stramineous and sooty scales, becoming almost uniformly whitish on underparts.

Rostrum comparatively stout, slightly longer than prothorax, straight to near apex; with acute ridges alternated with rows of squamiferous punctures to apical fourth (where the antennæ are inserted), in front of which the punctures are crowded and naked. Prothorax moderately transverse, sides rounded, at apex suddenly narrowed. Elytra elongate-subcordate, sides nowhere parallel; with rows of large, partially concealed punctures. Abdomen somewhat flattened along middle, fifth segment slightly longer than second and third combined. Legs rather long, femora acutely dentate, tibiæ thin. Length, 3·75–4 mm.

♀. Differs in having the rostrum longer, thinner, feebly and evenly curved throughout, glabrous, ridges and punctures less pronounced, antennæ inserted at apical two-fifths, abdomen evenly convex, fifth segment shorter, and legs slightly shorter.

Australia.

A large acutely dentate species, with rostrum somewhat as on *S. variegatus,* but shorter, elytra with irregularly distributed blackish spots, and without a pale V. On the male a large portion of the elytra is obscurely reddish, on the female they are almost entirely black. On the head and rostrum most of the scales are dark, on the pronotum they are mostly pale, with three obscure dark vittæ; on the elytra about half of the scales are of a slaty-white, many of the spots bordered or mixed with stramineous; with numerous small black spots. Allowing for the notches at their junction the outlines of the prothorax and elytra are elongate-elliptic; the base of the latter from directly above is seen to be evenly incurved, from behind it appears to be feebly bilobed. The "peep holes" are semi-double, but obscured by clothing.

Storeus insularis n. sp.

♂. Dull reddish-brown, antennæ and legs paler, most of under surface black. Densely clothed with slaty-grey or whitish scales and setæ, with some small and ill-defined dark patches on prothorax and elytra, but the latter also with a large dark median spot, behind which the scales are paler than elsewhere.

Rostrum thin, parallel-sided, slightly curved, slightly longer than prothorax; with fine ridges alternated with rows of squamiferous punctures almost to between antennæ (these inserted at apical third), in front with crowded and small punctures. Prothorax strongly transverse, apex about two-thirds the width of base, punctures normally concealed. Elytra elongate-cubcordate, sides nowhere parallel, base feebly trisinuate (from behind appearing bilobed); with rows of large, partially concealed punctures. Two basal segments of abdomen slightly depressed in middle, fifth very little longer than second. Femora acutely dentate, tibiæ rather long and thin, the apical hook acute. Length, 2·5 mm.

Queensland.—Magnetic Island in September (A. M. Lea). Type (unique), *I. 16247.*

At first glance almost appearing to belong to *Emplesis macrosticta*, but the elytral setæ are much more conspicuous, the femora are dentate, and the claws are strongly appendiculate. The dark spots on the elytra (except the large median one, beneath which the derm is also dark) are narrow, and, although ill-defined, suggest the tessellation of many of the species of *Emplesis*. The "peep holes" of the prosternum are small and partly obscured by scales.

Storeus hoplocnemis n. sp.

♂. Reddish-brown, tip of rostrum and parts of legs blackish. Densely clothed with brown scales and setæ of two shades of colour, becoming paler on under parts, and snowy on scutellum.

Rostrum thin, about one-fourth longer than prothorax, almost straight to insertion of antennæ at apical fourth, and then suddenly curved; with acute ridges, alternated with rows of squamiferous punctures to apical fourth, and then shining, with numerous sharply defined punctures. Prothorax moderately transverse, sides slightly dilated to near apex, and then suddenly narrowed to apex; punctures normally concealed. Elytra distinctly wider than prothorax, widest at about apical third, base bilobed; with rows of large, partially concealed, setiferous punctures, some of the interstices feebly nodulose. Abdomen with a feeble depression on first segment, fifth about as long as second and third combined. Legs rather long; femora unarmed; front tibiæ with a distinct projection on lower surface one-third from apex; claws appendiculate. Length, 3–3·5 mm.

♀. Differs in having the rostrum longer, thinner, gently curved throughout, glabrous, only the median ridge fairly distinct, the punctures smaller, antennæ inserted at apical third, elytra wider, abdomen evenly convex, the fifth segment smaller, and front tibiæ only slightly angular at the position of the projection.

New South Wales.—Dorrigo (W. Heron); Queensland.—Bunya Mountains in December (H. Hacker). Type, *I. 16308*, in South Australian Museum; cotype in Queensland Museum, *C/3183.*

Very distinct by the front tibiæ of the male. On the pronotum the scales are of an almost uniform brown, but the setæ are mostly blackish. On the elytra the scales are of two shades, of which the slightly paler one occupies most of the apex, and is triangularly advanced on the suture, the two shades separated by small blackish spots and lines obliquely placed. There are some sparse interocular setæ. The specimen from Queensland is larger than the type, many of its body parts are black and most of the rostrum; its scales are also darker, but the two shades on the elytra are separated in the same way.

Storeus amplipennis n. sp.

♂. Blackish-brown, antennæ and tarsi paler. Densely clothed with brown scales and somewhat paler setæ, somewhat variegated on underparts.

Rostrum distinctly longer than prothorax, moderately curved, with acute ridges alternated with rows of squamiferous punctures to apical fourth (where the antennæ are inserted), in front with numerous naked punctures. Prothorax almost as long as the greatest width, apex about two-thirds the width of base; punctures normally concealed. Elytra cordate, base bilobed, beyond middle more than twice the width of prothorax; with many minute nodules posteriorly; with rows of large setiferous punctures, appearing small through clothing; each side at basal third with a lobe projecting downwards, but invisible from above. Abdomen with a shallow depression along middle of two basal segments, fifth almost as long as second and third combined. Legs rather long, femora edentate; front tibiæ with a distinct projection one-third from apex on lower surface, middle pair with a smaller projection. Length, 4 mm.

Queensland.—Mount Tambourine, in November (H. Hacker). Type (unique) in Queensland Museum, *C/3184*.

A very distinct species, allied to the preceding one, but larger, elytra much wider in proportion, each with a large lateral sub-basal lobe, with many small nodules posteriorly, and middle as well as front tibiæ with a projection. The femora are not dentate, but the hind pair have a distinct swelling at the position of a tooth. The scales on the upper surface are almost uniformly coloured, but the setæ are somewhat paler; on the abdomen the scales are mostly pale, becoming darker posteriorly, on the front legs the clothing is darker than on the others. There are numerous suberect interocular setæ.

Storeus carinirostris n. sp.

(Text-figure 1, M.)

♂. Reddish-brown, metasternum sometimes infuscated. Densely clothed with stramineous scales, the elytra with several dark spots, and numerous pale and dark setæ.

Rostrum slightly longer than prothorax, gently curved; with acute ridges, alternated with rows of squamiferous punctures to apical third (where the antennæ are inserted); in front with crowded but not always naked punctures. Prothorax distinctly transverse, sides strongly rounded, apex about half the width of base; punctures normally concealed. Elytra elongate subcordate, base slightly and evenly incurved, sides nowhere parallel; rows of setiferous punctures obscured by clothing. Abdomen gently convex, fifth segment very little longer than second. Femora slightly but acutely dentate; front tibiæ with a rather acute projection on lower surface two-fifths from apex. Length, 3·5–4 mm.

♀. Differs in having the rostrum distinctly longer, thinner, and more curved, its ridges, except the median one, and squamiferous punctures not passing the antennæ (which are inserted two-fifths from apex), in front with smaller punctures, all naked; abdomen more convex, and front tibiæ without projection.

New South Wales.—Dorrigo (W. Heron). Type, *I. 16281.*

The front tibiæ have a projection on the lower surface, approaching those of the two preceding species, but the general outlines differ, the femora are dentate, and the clothing is more variegated. On several specimens many of the scales are shining, or have a faint golden gloss. On the apical third of each elytron, on the third and fourth interstices, there is a rather small but distinct blackish spot, occasionally broken up into two or three very small ones, towards the sides there are several smaller ones, usually not quite as dark. From the sides the elytra are seen to have numerous suberect setæ of two colours, but from above only the pale (almost white) ones are distinct, and they are fairly numerous on the apical slope; from behind the setæ are seen to form a quite regular row on each interstice. The claws, although appendiculate, appear to be simple from most directions. The "peep holes" of the prosternum are sometimes quite sharply defined, but they are usually obscured by clothing. The sexes may be readily distinguished by the rostrum and front tibiæ, although the basal half of the former is sculptured and clothed much the same in the female as in the male; the abdomen scarcely differs sexually.

Storeus inconstans n. sp.

♂. Blackish, some parts obscurely diluted with red, part of rostrum, antennæ, and tarsi reddish. Densely clothed with scales varying from stramineous to whitish and black, becoming uniformly pale on underparts; with numerous setæ on upper surface, and a few between eyes.

Rostrum distinctly longer than prothorax, moderately curved; with acute ridges, alternated with rows of squamiferous punctures to apical fourth (where the antennæ are inserted); in front with crowded, naked punctures. Prothorax distinctly transverse, sides gently dilated to near apex, and then suddenly narrowed; punctures crowded but normally concealed. Elytra much wider than prothorax, sides gently rounded to beyond the middle, base distinctly trisinuate; with seriate rows of setiferous punctures, much obscured by clothing. Abdomen with first and second segments slightly depressed along middle, the fifth almost as long as second and third combined. Femora stout, neither grooved nor dentate; tibiæ rather thin. Length, 4–4·5 mm.

♀. Differs in having the rostrum longer, thinner, more strongly and evenly curved, ridges and seriate rows of squamiferous punctures confined to base, elsewhere with small punctures, and abdomen evenly convex, with the fifth segment shorter.

Queensland.—Tambourine, in November (H. Hacker); New South Wales.—Tooloom, in January (Hacker). Type, in Queensland Museum *C/3185*; cotype, *I. 16309*, in South Australian Museum.

In general appearance somewhat like *S. albosignatus* on an enlarged scale. Considerably wider than *S. majusculus*, the dark markings more scattered, and front tibiæ of male not fringed. The dark scales on the elytra form small spots not alike on any two of the four specimens taken; they are numerous and irregularly distributed on two of them, but hardly more than stains on the others; there are also many pale spots, so that the elytral colours appear to be irregularly intermingled; on the pronotum the clothing is also variable. The blackish and whitish setæ of the elytra are about equally numerous, but from above the whitish ones appear to be in the majority, from behind they are seen to form a regular row on each interstice. On one of the females there are two small spots of black scales on the head. Each claw has a large appendix, although it is usually difficult to see it. The "peep holes" of the prosternum are usually obscured by scales.

Storeus inconspicuus n. sp.

♂. Dark reddish-brown, abdomen, antennæ, and legs paler. Densely clothed with stramineous-brown scales, with a few paler and darker spots; becoming almost white on under surface. With fairly numerous setæ, subdepressed on pronotum, suberect on elytra, on the latter forming a row on each interstice.

Rostrum distinctly longer than prothorax, slightly curved; with fine ridges alternated with rows of squamiferous punctures to apical fourth (where the antennæ are inserted); in front with numerous naked punctures. Prothorax about as long as the basal width, sides strongly rounded, apex about two-thirds the width of base. Elytra subcordate, base distinctly wider than prothorax, sides nowhere parallel, base feebly trisinuate; rows of setiferous punctures obscured by clothing. Two basal segments of abdomen somewhat flattened along middle, fifth very little longer than second. Middle and hind femora moderately dentate, the others edentate. Length, 2·5 mm.

Northern Queensland (Blackburn's collection).—Type (unique), *I. 16315*.

An unusually small species, somewhat like *S. albosignatus* in miniature, but with less numerous spots and some of the femora dentate. On the elytra there are some minute blackish spots on the odd interstices, and a fairly large one on the suture at the basal third, behind it there is a small V formed by minute white spots. On the elytra many of the setæ are of a snowy whiteness; on the pronotum they are nearly all dark.

Storeus fasciculatus n. sp.

♂. Blackish, antennæ and tarsi obscurely reddish. Densely clothed with variegated scales and setæ, and with numerous fascicles.

Rostrum considerably longer than prothorax, almost straight to near apex, parallel-sided, with acute ridges alternated with rows of squamiferous punctures to apical fourth (where the antennæ are inserted); in front with numerous naked punctures. Prothorax about as long as the basal width, sides dilated to apical third and then suddenly narrowed, punctures normally concealed. Elytra much wider than prothorax, sides strongly trisinuate before middle, and with a distinct lobe near metasternum, base bilobed; seriate rows of setiferous punctures appearing rather small through clothing. Abdomen flattened along middle, fifth segment slightly longer than second. Legs rather long, femora dentate. Length, 4 mm.

Queensland.—Cairns district (F. P. Dodd). Type, *I. 16313.*

A beautiful and well-marked species, which may be considered as worthy of generic rank, but the pectoral canal, "peep holes," and appendiculate claws are as on many species of the genus. Much of the clothing on the upper surface is of a chocolate-brown colour, changing to rusty-brown and stramineous in places; on the pronotum there is a small whitish spot on each side of the base. On each elytron there is a narrow white line, commencing immediately behind the spot on the pronotum, and running obliquely inwards to beyond the middle, the line connected with its fellow by another narrow line, which traverses the suture at the basal fifth, and much of the intervening space having velvety black scales; there is a large pale patch partly before and partly on the apical slope, bordered by velvety black scales. Many of the setæ on the upper surface and all in the rows of punctures are white, giving it a speckled appearance. On the under surface the scales are mostly stramineous or rusty-brown, the abdomen with a dark vitta on each side, commencing at the tip of the second segment, and a less distinct but longer median one; there is also a large snowy spot on each side of the base of the prosternum. Each tibia appears to have a projection at its outer base, but this is due to the setæ there being longer than elsewhere. Of the fascicles there are two conspicuous interocular ones, two semi-double ones at the apex of the pronotum, and four traversing its apical third; on each elytron there are two large and several small ones, the largest one is apparently supported on an elongated tubercle near the middle of the third interstice, the setæ composing it are mostly rusty-brown, becoming velvety-black in front, and whitish behind, the next largest is on the preapical callus, and is less variegated.

Two females, from Southern Queensland, probably belong to the species; they differ in markings, but the fascicles are the same in position, although somewhat reduced in size; the rostrum is slightly longer, much thinner, gently curved throughout, clothed only on the basal third, the ridges much shorter, antennæ inserted only slightly in front of the middle, abdomen more convex, with the third and fourth segments larger and the fifth smaller; the abdominal markings of the type are indicated, but the snowy spots of the prosternum are completely absent. One is from Stradbroke Island (H. J. Carter); on its

pronotum the two small pale basal spots are narrowly connected, and each is produced obliquely forwards so as almost to touch one of the outer fascicles; on the elytra the narrow white lines are present but less distinct, as the whole of the space between them is clothed with pale scales as a wide sutural vitta, which is suddenly dilated into a large angular patch just beyond the largest fascicles, its femora are more strongly dentate than on the type. The other female, from the National Park (H. Hacker), is in the Queensland Museum, and is smaller (3·5 mm.), most of the clothing on its upper surface is of a rusty-red, there are no white scales on its pronotum; the pale sutural patch is hardly more than indicated, and the patch beyond the largest fascicles is greatly reduced in size and almost divided in two; the femora are less strongly dentate than on the type, but the basal projections of the tibiæ are larger.

Storeus seticollis n. sp.

♀. Reddish-brown, club infuscated. Densely clothed with pale brown or rusty scales, interspersed with numerous setæ, with many small whitish spots on elytra; underparts mostly with pale clothing.

Rostrum thin, about once and one-half the length of prothorax, gently curved, very sparsely clothed on basal third; with feeble rows of punctures. to apical two-fifths (where the antennæ are inserted), in front with sparse and minute punctures. Prothorax moderately transverse, sides slightly dilated from base to near apex, and then suddenly narrowed; punctures normally concealed. Elytra much wider than prothorax, base feebly bisinuate, from behind appearing bilobed, sides lobed near metasternum; with seriate rows of punctures reduced in apparent size by clothing. Abdomen evenly convex, fifth segment slightly longer than second. Femora acutely dentate, claws strongly appendiculate. Length, 3·5 mm.

Queensland.—Cairns district (A. M. Lea). Type (unique), *I. 16310.*

Evidently allied to the preceding species, but markings on a different plan, fascicles reduced in numbers and size, and tibiæ no wider near base than elsewhere. On the pronotum the scales are almost uniformly brown, but there are many blackish setæ; on the elytra there are many small whitish spots, nearly all of which are crowded on a subtriangular space on each side at the basal third; the dark setæ are much less numerous than on the pronotum, and there are some whitish ones as well, from behind they are seen to form a regular row on each interstice. Some whitish setæ form a small fascicle on the third interstice about its middle, and there are two very feeble dark fascicles between the eyes. Many of the seriate punctures on the elytra are without setæ, and even when present they are below the general level. The "peep holes" of the prosternum are rather large.

Storeus hystricosus n. sp.

♂. Blackish, rostrum antennæ and legs more or less reddish. Densely clothed with dingy brown scales, interspersed with numerous long erect setæ

the latter also form two feeble fascicles at the apex of prothorax, several feeble ones on elytra, and a long and very distinct one (supported on a tubercle) on the third interstice about the middle.

Rostrum about the length of prothorax, slightly curved, parallel-sided; with fine ridges alternated with rows of setiferous punctures to apical third (where the antennæ are inserted), in front with numerous naked punctures. Prothorax moderately transverse, basal half parallel-sided, rapidly narrowed in front; punctures concealed. Elytra elongate-subcordate, sides nowhere parallel, base feebly trisinuate, from behind appearing bilobed; with rows of unusually large punctures, but almost concealed by clothing. Fifth segment of abdomen slightly longer than second. Femora slightly dentate, tibiæ angular near outer base, claws strongly appendiculate. Length, 2·5–3 mm.

Queensland.—Cairns. Type in Macleay Museum.

On the type there are two small fascicles at the apex of the elytra, and one on each preapical callus, the setæ so closely compacted that the fascicles resemble spines (from a second specimen the apical ones have been abraded); the long fascicle on each elytron is more than half the length of the prothorax, and readily distinguishes the species from all previously named ones. A new genus may eventually be proposed for it, but the deep pectoral canal, distinctly separated front coxæ, "peep holes" of prosternum (concealed by clothing on one specimen) and strongly appendiculate claws, are as on many species of the genus.

Storeus eurypterus n. sp.

♂. Reddish-brown, metasternum somewhat infuscated. Densely clothed with variegated scales and setæ, some of the latter forming fascicles.

Rostrum about the length of prothorax, slightly curved; with fine ridges alternated with rows of setiferous punctures to apical fourth (where the antennæ are inserted), in front with numerous naked punctures. Prothorax moderately transverse, basal two-thirds almost parallel, then strongly narrowed to apex; punctures normally concealed. Elytra at base much wider than prothorax, oblong subcordate, base trisinuate; with rows of large punctures, almost concealed by clothing. Abdomen gently convex, fifth segment slightly longer than third. Femora strongly and acutely dentate, the front ones less strongly than the others; claws each with a large basal appendix. Length, 3–3·5 mm.

Northern Queensland (Blackburn's collection). Type, *I. 16314.*

A conspicuously marked species with unusually wide elytra, the long fascicle on each of which is more loosely compacted than on the preceding species, and not supported on a tubercle; the clothing generally is more variegated, and the femora are much more acutely dentate. There are a few setæ between the eyes, but they could scarcely be regarded as forming fascicles;

on the pronotum the scales are stramineous and more or less sooty brown, unevenly mingled, but mostly pale on the sides; there are numerous setæ, of which some black ones form two feeble apical fascicles. On the elytra a fairly wide dark sutural patch dilates hindwards, till it passes two large fascicles, it is then marked by a narrow white M, beyond which it is again dilated (but not quite as dark), till it covers the whole apex, leaving a large patch (curved on its inner edge) from the shoulder to beyond the middle on each elytron; of a rather pale colour, almost stramineous, but in some lights with a golden gloss; the numerous erect setæ are mostly black, and some of these form a conspicuous fascicle on the middle of the third interstice. Close beside the scutellum the clothing is paler than elsewhere, slightly accentuating the trisinuation of the base. Another male has a white M quite as distinct as on the type, but beyond it the derm is reddish, except that there is a blackish spot towards each side. A specimen, apparently a female, differs from the others in having the rostrum slightly thinner, longer and more curved, glabrous on the apical half, antennæ inserted about the apical third, and abdomen more convex.

Storeus cognatus n. sp.

♂. Pale reddish-brown, metasternum somewhat darker. Densely clothed with pale, almost stramineous, scales, in parts with a slight golden gloss, and in places with faint brown mottlings; under surface with sparser and almost white scales. Upper surface and legs, in addition, with numerous stiff setæ, mostly pale, but about middle of elytra some distinct blackish ones.

Rostrum moderately stout, the length of prothorax, slightly curved; with fine ridges, alternated with rows of setiferous punctures to apical fourth (where the antennæ are inserted), in front with crowded, naked punctures. Prothorax moderately transverse, sides slightly dilated, becoming strongly depressed towards apex. Elytra subcordate, base gently incurved and very little wider than prothorax, sides rather strongly rounded; with rows of large punctures, but normally almost concealed. Abdomen shining, fifth segment slightly longer than second, and with a small median fovea. Femora strongly and acutely dentate, tibiæ thin, claws appendiculate. Length, 2·5 mm.

Northern Queensland (Blackburn's collection). Type (unique), *I. 16335*.

The type of this species was mounted with specimens of the preceding one, and it certainly appears to be allied to it, but it differs from the male in the clothing being more uniform and paler, without fascicles, the elytra narrower and not trisinuate at the base, the abdomen more sparingly clothed, and with a small subapical fovea.

Storeus apicalis n. sp.

♂. Reddish-brown, antennæ and legs paler, suture and parts of under surface blackish. Densely clothed with stramineous or buff, slightly variegated

scales, but a conspicuous dark patch on apex of elytra. With numerous suberect sètæ, nowhere forming fascicles, and on the elytra forming a distinct row on each interstice.

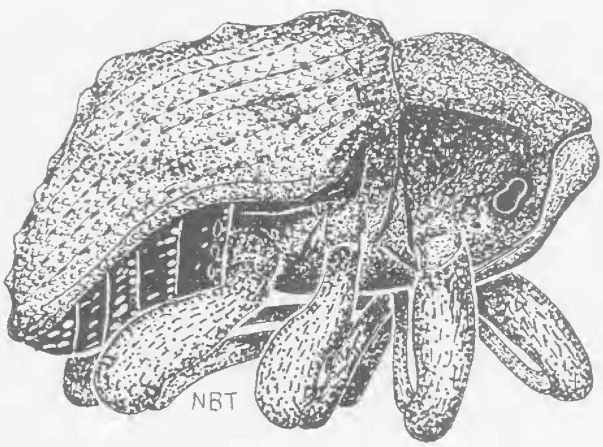
Rostrum slightly longer than prothorax, gently curved, parallel-sided; ridges and seriate punctures concealed throughout by scales and setæ. Antennæ inserted at apical fourth of rostrum. Prothorax strongly transverse, parallel-sided to near apex and then strongly narrowed; with crowded, normally concealed punctures. Elytra elongate-cordate, base bilobed, sides nowhere parallel; with regular rows of large punctures, appearing much smaller through clothing. Abdomen somewhat flattened along middle, fifth segment slightly longer than second. Femora strongly and acutely dentate, claws semibifid. Length, 4–4·25 mm.

Queensland.—Cairns district (F. P. Dodd and Dr. E. W. Ferguson). Type, *I. 16329.*

An elongate-elliptic species, with the general appearance of *Artematocis*, but the femora are strongly dentate. The rostrum is clothed to the mandibles, and the claw joints are more exserted than usual, with the appendix to each claw so large that from some directions it appears bifid. From above the setæ appear to be almost or entirely white, and just before the apical patch unusually numerous, but from the sides many of them are seen to be more or less dark brown. The elytra are evenly curved posteriorly, but at the first glance the apical patch causes them to appear abruptly vertical, as on many Bostrychidæ.

Storeus specularis n. sp.

(Text-figure 1, N.)



Text-figure 2. *Storeus specularis* Lea.

♂. Black, antennæ and legs and sometimes the tip of rostrum reddish. Densely clothed with scales and setæ, varying from stramineous to rusty-brown; a few minute sooty spots on elytra.

Rostrum almost as long as prothorax, moderately curved, feebly diminishing in width to apex, each side of base notched; with fine ridges, alternated with rows of setiferous punctures to apical third (where the antennæ are inserted), in front with naked punctures. Prothorax strongly transverse, sides gently rounded, in front strongly depressed on each side; punctures only partially concealed. Elytra subcordate, base trisinuate and slightly wider than elytra, widest near base, where there is a distinct lobe on each side (hardly indicated from above); with rows of large, setiferous punctures, appearing smaller through clothing; with many small nodules. Prosternum with a semi-double fovea on each side in front, pectoral canal deep and wide, narrowed between front coxæ, but these well separated. Fifth segment of abdomen slightly longer than second. Middle and hind femora grooved and moderately dentate, the front ones feebly grooved and slightly dentate; claws appendiculate. Length, 5–5·5 mm.

New South Wales.—Tooloom, in January (H. Hacker); Queensland.—Mount Tambourine, in November (Hacker). Type in Queensland Museum, *C/3186*; cotype, *I. 16330*, in South Australian Museum.

On examining a specimen of this species with the rostrum at rest in the pectoral canal an eye was seen apparently looking out of a hole in the prosternum, even the facets were visible; on looking closer a fovea was seen on each side obliquely in front of the coxa, the fovea is semi-double and does not go completely through, as there is a very thin membrane between it and the canal. It appears to serve as a "peep hole" for the beetle, when all its appendages are contracted together. Somewhat similar "peep holes" are to be seen on most species of the genus, although they are occasionally obscured by clothing or dirt. The specimens from Mount Tambourine are all more or less muddy, so that the scales are obscured; on the Tooloom specimens the clothing is in perfect condition, but varies somewhat; on the more strongly marked specimens a patch of stramineous scales commences on each shoulder, its inner margin runs obliquely inwards to the third interstice at the basal fourth, along which it is continued till it becomes oblique to the suture, at the summit of the apical slope; the pale scales (except for some minute sooty spots) covering about three-fourths of the surface; on other specimens the disposition is much the same, but the shades are less contrasted; the small nodules are often rather densely setose, and some of them have a fasciculate appearance. On the pronotum the clothing consists of setæ only, stramineous and brown, the former colour mostly in vittæ, but the surface is not very densely clothed, so that many of the punctures are normally visible; on the rostrum and under surface the clothing also consists solely of setæ, but on the legs of setæ and scales. Of the specimens taken by Mr. Hacker six have the rostrum with distinct ridges to the insertion of antennæ, and with

numerous sharply defined punctures in front, on five others the ridges do not extend so far, and the front part has smaller and sparser punctures; the insertion of antennæ and the abdomen, however, do not differ, and the differences are probably not sexual.

Photo., H. Hacker. Text figure 3.—Claws of *Storeus specularis* Lea.

A female, from the Bloomfield River (C. French, junr.) probably belongs to this species, or to an allied one. Its clothing is less variegated, the setæ are stouter and more scale-like in character, the rostrum is slightly longer, more curved, much thinner, less distinctly notched at base, and elsewhere almost impunctate; antennæ inserted not quite so close to apex, and abdomen more convex, but the femora, especially the front ones, are more strongly dentate.

Storeus armipennis, n. sp.

(Text-figure 1, O.)

♂. Black, antennæ reddish, parts of rostrum and of tarsi somewhat darker. Densely clothed with scales varying from stramineous, through rusty-brown almost to black, the shades irregularly distributed.

Rostrum slightly longer than prothorax, moderately curved, almost parallel-sided except for a triangular notch on each side of base; with acute ridges, alternated with rows of squamiferous punctures to apical fourth (where the antennæ are inserted), in front with naked punctures. Prothorax strongly transverse, hind angles rounded off, sides rounded, strongly depressed in front, the middle acutely produced; punctures normally concealed. Elytra strongly trisinuate at base, each side strongly lobed near base, the lobe not distinct

from above, sides thence strongly narrowed to apex; with rows of setiferous punctures, alternate interstices slightly elevated and in places nodulose, but the third strongly elevated in middle; a pair of large, acutely conical tubercles, on suture at summit of apical slope. Prosternum with a large deep fovea on each side, with a triangular projection between it and pectoral canal. Fifth segment of abdomen almost as long as second and third combined. Femora strongly dentate, claws appendiculate. Length, 5–6·5 mm.

♀. Differs in having the rostrum slightly longer and thinner, ridges and seriate punctures terminated before antennæ (these inserted not quite so close to apex), punctures in front smaller and sparser, and abdomen slightly more convex.

Queensland.—Endeavour River (Macleay Museum)

A very distinct species, in general appearance very different from all others referred to the genus, but in some respects allied to the preceding species. The intercoxal process of the metasternum is strongly transverse and gently concave, much as on several species of *Melanterius*, but the appendiculate claws forbid its being placed in the Cryptorhynchides. The "peep holes" of the prosternum are unusually large, and the triangular processes near them are much as on *S. maximus*. Seen from the sides the base of the rostrum appears slightly elevated above the head, and the front part of the latter to be flattened. From the side each elytron is seen to have a large lobe, extending almost the length of the prothorax, abruptly terminated, the lobe bounded by the ninth row of punctures; each side has a strong row of epipleural punctures, concealed from above. The second segment of the abdomen is not much longer than the third or fourth. A specimen from the South Johnstone River (H. W. Brown), in the South Australian Museum, is entirely pale (except that a few of the setæ are blackish), but it is evidently immature.

Storeus lætus n. sp.

♂. Reddish, a large blackish elliptic blotch on elytra on the basal two-fifths, occupying rather more than the sutural third, metasternum deeply infuscated. Densely clothed with stramineous scales, mostly with a golden gloss, becoming white on under parts; a row of setæ on each odd interstice of elytra.

Rostrum the length of prothorax, slightly curved, not quite parallel-sided; with fine ridges, alternated with rows of setiferous punctures to apical third (where the antennæ are inserted), in front with numerous naked punctures. Prothorax strongly transverse, sides subparallel to near apex; punctures normally concealed. Elytra elongate-subcordate, base feebly trisinuate, from behind appearing bilobed; rows of setiferous punctures almost concealed by

clothing. Abdomen slightly flattened along middle, the fifth segment slightly longer than second. Femora edentate, the middle and hind ones moderately grooved; claws appendiculate. Length, 2·5–3 mm.

♀. Differs in having the rostrum thinner and slightly longer, ridges and setiferous punctures scarcely extending to middle, punctures elsewhere smaller and sparser, antennæ inserted two-fifths from apex of rostrum, abdomen evenly convex, with the third and fourth segments somewhat larger.

Queensland.—Bunya Mountains, in December (H. Hacker). Types in Queensland Museum, *C/3187*; cotype, *I. 16336*, in South Australian Museum.

An elongate-elliptic species, with somewhat golden clothing. On the only male taken the abdomen is entirely pale, on three females part of the basal segment is as dark as the metasternum. The pronotum has a slightly speckled appearance, owing to the setæ, but not the scales, being opaque. The setæ forming the rows on the alternate interstices of elytra from above appear to be entirely white, but from the sides they are seen to be mixed with dark brown ones. Two females from the Clarence River (G. Compere) differ in being without the large dark patch on the elytra, and the metasternum only faintly infuscated.

Storeus aurifer n. sp.

(Text-figure 1, P.)

♂. Dark reddish brown, rostrum antennæ and legs paler, metasternum and sometimes the abdomen black. Densely clothed with golden scales, becoming white on under parts.

Rostrum slightly longer than prothorax, moderately curved; with fine ridges alternated with rows of setiferous punctures to apical third (where the antennæ are inserted), in front with many naked punctures. Prothorax moderately transverse, sides feebly diminishing in width to near apex, and then strongly to apex itself; with dense, normally concealed punctures. Elytra wide, subcordate, base almost truncate, sides strongly rounded; with rows of large punctures, appearing small through clothing. Basal segment of abdomen with a shallow median depression, fifth almost as long as second and third combined. Femora stout, grooved, and edentate, the front pair with a fringe on basal two-thirds of lower surface; tibiæ thin, the front pair with a fringe on most of the lower surface; claws appendiculate. Length, 3–3·5 mm.

♀. Differs in having the rostrum longer, thinner, more curved, clothed only near base, elsewhere almost impunctate, antennæ inserted two-fifths from apex of rostrum, abdomen more convex, third and fourth segments larger, and front legs not fringed.

Fiji.—Taveuni, in May (A. M. Lea). Type, *I. 16300.*

A small rather wide species, with beautiful golden scales, quite an ordinary member of the genus so far as the pectoral canal and separation of front coxæ are concerned; the "peep hole" on each side of the prosternum

looks much like a spiracle, but it is anterior to the coxa. The species is considerably smaller than any of the others with front tibiæ fringed in the male, and appears to be allied to the preceding one, on which, however, the tibiæ are not fringed. On many specimens the scales on the upper surface are entirely golden, but on many others there are numerous small ill-defined spots on which the scales are white and opaque. There are no rows of setæ on the interstices. To see the derm clearly it is usually necessary to remove the scales. On many specimens the rostrum and antennæ are almost flavous.

Storeus minimus n. sp.

(Text-figure 1, Q.)

♂. Pale reddish-castaneous, metasternum usually somewhat darker than abdomen. Densely clothed with pale scales, mostly with a golden gloss, but becoming somewhat variegated on elytra, and sparser and whitish on under parts.

Rostrum slightly longer than prothorax, slightly curved; with fine ridges alternated with rows of squamiferous punctures to apical fourth (where the antennæ are inserted), in front with numerous naked punctures. Prothorax moderately transverse, sides rounded, base almost twice the width of apex; with dense, normally concealed punctures. Elytra subcordate, base feebly trisinuate, from behind appearing bilobed, sides nowhere parallel; with rows of large punctures, appearing small through clothing. Abdomen with two basal segments somewhat flattened in middle, fifth slightly longer than second. Femora grooved and edentate, claws appendiculate. Length, 2–2·5 mm.

♀. Differs in having the rostrum slightly longer and thinner, ridged and clothed for a shorter distance, antennæ inserted two-fifths from apex of rostrum, and abdomen more convex.

Fiji.—Taveuni, in May; Mokongai, in June, Viti Levu. (A. M. Lea). Type, *I. 16301.*

The smallest known species of the genus, but with normal pectoral canal and separation of front coxæ; the "peep hole" on each side of the prosternum is fairly large, and is connected with an obliquely impressed line. It differs from the preceding species in being smaller and narrower, with different clothing and front legs not fringed in the male; like that species it has no rows of setæ on the elytral interstices. There are usually three series of brownish scales on the elytra; a small wide V on the suture about the middle (this is seldom absent), and two longer but much less distinct ones between it and the apex; the V's are usually fairly distinct, owing to the scales in their vicinity being paler than elsewhere, but the postmedian ones are often indicated by a few small spots or are occasionally absent. On some specimens on which the golden gloss is faint or absent, the elytral clothing appears as if slightly tessellated.

Storeus inermis n. sp.

♀. Reddish-brown. Densely clothed with variegated scales, becoming uniformly pale on under parts.

Rostrum thin, considerably longer than prothorax, moderately curved glabrous, with sparse and minute punctures, becoming seriate towards base. Antennæ inserted in middle of rostrum. Prothorax moderately transverse, basal three-fifths sub-parallel, apical two fifths much narrower; punctures normally concealed. Elytra subcordate, base almost truncate, sides rounded; with rows of large punctures, appearing smaller through clothing. Abdomen evenly convex, fifth segment slightly longer than second. Femora edentate, claws appendiculate. Length, 2·5 mm.

Fiji.—Viti Levu (A. M. Lea). Type (unique), *I. 16312.*

A small species, like *S. albosignatus* on a reduced scale. It has the general appearance of *S. inconspicuus*, but there are no setæ on the pronotum, and very few, and those short, on the elytra. On the elytra the scales are mostly fawn-coloured, but variegated with numerous small whitish spots, and about the same number of brownish ones; on the pronotum most of the clothing is pale stramineous or almost white, but with numerous brownish spots. Many of the scales have a slight golden lustre in certain lights. The "peep holes" of the prosternum are fairly large.

EMPLESIS.

As will be seen under the preceding notes on *Storeus*, it is proposed to reinstate this genus, as its species have simple claws, although on many of them there is a basal swelling. The species unknown to me are:—

lineigera Pasc. Evidently allied to *scolopax*, having "*Capite inter oculos abrupte calloso.*"

simplex Pasc. The brief description of this insect fits so many species, that it is undesirable to attach the name to any before me, without additional particulars to those given.

ocellata Blackb. A fairly large species, with a large dark spot outlined by white scales, and common to the elytra and pronotum.

remissa Faust. A small species from Western Australia, the prothorax with four white lines of clothing.

On most species of the genus the clothing of the elytra is more or less tessellated, the spots are narrow and do not pass the boundaries of an interstice; on some species, in addition to the tessellation, there are large black blotches, or white patches. On the tessellated species there are normally two subtriangular dark spots at the base of the pronotum and often a dark median line, occasionally there are four spots at the base, and usually on such specimens there is another series of four spots across the middle, the outer ones of which are usually faint.

Emplesis interioris Blackb.

The type of this species is in the British Museum. Three small specimens from Oodnadatta, in the Blackburn collection (but not even placed under the genus) evidently belong to two species, either of which may be *interioris*; two are females, distinguished, *inter se*, only by the rostrum: rather strongly curved on one, almost straight on the other; the third is a male with much shorter rostrum, which is slightly longer than the prothorax, and its curvature intermediate between those of the females (in most species of the genus the rostrum of the female is considerably longer than that of the male, but it may be more or less strongly curved). The male is distinct from all others before me by its abdomen, the third and fourth segments of which are quite unusually short, their combined length being only about one-third of that of the fifth (on each female their combined length is equal to that of the fifth). Although described as a male Blackburn gave no masculine features in the description, the abdomen not even being mentioned.

Emplesis storeoides Pasc.

(Text-figure 1, R.)

In Masters' Catalogue this species is recorded as from Champion Bay, but from Gayndah in the description. There are before me many specimens from New South Wales (one from Armidale is the nearest in that State to Gayndah), Victoria, Tasmania, and South Australia that possibly belong to the species, one of which bears Blackburn's label as *E. storeoides*. A specimen of the same species from Mount Lofty was also identified by Blackburn as *E. umbrosus*, but it is a very different species from one, in my collection, also bearing his label as *umbrosus*. They vary in length 2·5-4 mm., and somewhat in markings, but they all have a conspicuous pale short postmedian V on the elytra, the V often connected with other pale markings, so as to appear like a very short M, extending to both sides; often the letter is outlined in front with dark scales, and these may form a large patch extending almost to the base, on the apical slope there are usually also a few dark spots; not infrequently the whole of the apical third is clothed with pale scales. The V is somewhat similar to that on *Storeus variegatus*, but that species has dentate femora, and is considerably wider. The general colour of the scales varies from almost ashen-grey to bright reddish-brown. Some of the darker specimens agree fairly well with the original description; but I am doubtful if the identification is correct.